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ABSTRACT

This paper provides a critical review of empirical and theoretical underpinnings of current research on declining rates of fertility in western countries, particularly Canada. Section 1 describes contributions of demographic analysis to the explanation of declining fertility in western industrialized countries and elaborates on the limits of pure demographic research with regard to factors that influence decisions of couples or individuals. Section 2 explores physiological and medical aspects of increasing infertility among the decreasing number of couples willing to have children. The section also notes the limited impact of this infertility on the explanation of the dramatic decline of fertility in western nations. Section 3 underscores the contribution of economic factors to the decline in fertility and exposes major shortcomings of one strictly economic logic. Section 4 illustrates contributions of a sociological approach to understanding fertility decline and finds that its central concepts remain excessively abstract and remote from essential processes through which human preferences and values are shaped and acted upon. Section 5 examines the contours and efficacy of pronatalist population policies implemented in some western nations. Section 6 summarizes major limitations of current research and offers recommendations for further investigation. Just over 100 references are cited. (RH)

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EXPLAINING FERTILITY DECLINE IN THE WEST

(WITH SPECIAL REFERENCE TO CANADA):

A CRITIQUE OF RESEARCH RESULTS FROM SOCIAL SCIENCES

by

Françoise Lodh

March 1987

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INTRODUCTION

This paper provides a critical review of the major empirical and theoretical underpinnings of current research about the declining rates of fertility in western countries with special reference to Canada. In this preliminary review, the contributions of various disciplines in the social sciences have been assessed in order to understand the cogency and significance of the explanations they provide to account for a continuing decline in societal fertility. There is a rapidly expanding literature on the subject as various disciplines, including among others demography, physiology, economics, and sociology, proceed to establish their respective niches in the field. The result, to date, has been a massive proliferation of descriptive data and hypothesis testing. Yet, in the midst of highly sophisticated statistical studies and analytical models, certain core questions remain unanswered and even, on occasion, unasked: What determines the preferences of individuals to have or not to have a particular number of children? What constraints are particularly binding on such a choice at a point in time and over time? The present paper examines the difficult terrain each discipline has surveyed and begins to assess the limitations of the contributions any one discipline can make to an overall understanding of declining societal fertility. We proceed further to a consideration of the relationship between the various disciplines and the fragmentation of current knowledge about this trend the significance of which cannot be overestimated.

The paper is subdivided into the following sections. Section 1 describes the contributions of demographic analysis to the explanation of declining fertility in western industrialized countries and elaborates on the limits of pure demographic research with regard to the factors that influence decisions of couples and/or individuals. Section 2 explores the physiological and medical aspects of growing infertility among the diminishing number of couples willing to have children. It also notes the very limited impact such infertility (sterility) bears on the explanation of the dramatic decline of overall societal fertility in western nations. Section 3 underscores the contribution of economic factors to the decline in fertility and exposes major shortcomings of a strictly economic logic that proceeds on the basis of an assumed economic rationality as operative in the determination of preferences for/or against children. Section 4 illustrates the contributions of a sociological approach to an understanding of fertility decline and finds that

its central concepts of urbanization, heterogeneity, modernization, secularization and so on remain excessively abstract and remote from essential processes through which human preferences and values are shaped and acted upon within a broader context of social or collective valuation. Section 5 briefly examines the contours and efficacy of pro-natalist population policies as implemented in some western nations. We conclude in Section 6 with a summary of some of the major limitations of current research on the decline of fertility and a preliminary set of suggestions for a renewed research agenda from which we and others might proceed to a more integrated understanding of the many complexly interwoven factors that together shape the attitudes of society and its members toward procreation.

1. DEMOGRAPHY

To assess changes in the fertility behaviours of individuals and groups in industrialized countries, demographers have traditionally examined a number of variables that seem to have a direct impact on the number of children couples would like to have. These variables basically fall into two categories: a) reproductive behaviour variables including nuptiality patterns, timing of procreation etc., and b) mortality or probable mortality of children. Occasionally, a third variable contributing to the total population growth is added, namely, immigration.

Before we turn to a more detailed examination of the way demographers use these variables to account for the present low fertility levels in Canada as in other industrialized countries, it is worth mentioning the mode of fertility calculations. This is basically done in two ways, crossectional and longitudinal. The crossectional measure described by what is called Total Fertility Rate (TFR) is taken at a point of time and is derived from "the average number of children that would be born to women, if they survive through their reproductive years and bear children in accordance with the age-specific fertility rates observed in a given year". (Romaniuc, 1984, p. 12) It is highly sensitive to short fluctuations in reproductive behaviour. The longitudinal measure of fertility refers to the actual number of births a given cohort of women has in its lifetime. This measure gives a more accurate picture of actual population movements but its utility is diminished by the fact that it cannot be calculated before any particular cohort of women has passed through its reproductive years. As such, this measure may serve as a poor indicator of future population trends as fertility behaviours do change during such waiting periods. We have noticed major changes of this variety in industrialized countries since the nineteenth century. However, demographers agree that the overall trend in fertility in all western industrialized societies has been on the decline ever since the nineteenth century, but as we shall see the causes underlying this decline lie beyond the scope of demographic analysis *per se* for a complete explanation.

1.1 Demographic Variables

1.1.1 Nuptiality Variables

Demographers have traditionally considered here the following variables: age at marriage, marriage rate and duration of marriage. They have studied the impact these variables have upon age at birth of first child, spacing between children and the final number of children a couple will have. Needless to say, the interplay of these factors is extremely intricate and even demographers do not agree among themselves as to their degree of mutual influence.

a) Age at marriage; age at first birth; birth intervals

Later age at marriage has been in practice in Canada especially since the early 1970s. This practice does not however have the same explanatory power as it used to have in the early 1960s (at the time of the 1961 census) when marrying at 25 rather than 20 would reduce fertility by 30% (Samuel, 1981). However, most demographers still attach a great importance to nuptiality variables in the explanation of fertility decline (Balakrishnan, 1986). It has also been suggested that when the expected number of children is smaller, the catch-up in desired fertility with later marriage is easier. This 'catch-up' however reflects simply a birth postponement rather than an upturn in fertility (Grindstaff, 1984). There is today an upward shift in the timing of births and an increased spacing of births independent of the age of the mother (Romaniuc, 1984). Interestingly, late marriage and childlessness which were features of a particular segment of the population of the 1930s in Canada, were still accompanied by a higher fertility rate (2.6) than today (1.7; cf. Romaniuc, 1984). What is different today from the 1930s is the convergence among all groups of population towards having a smaller number of children. This fact in combination with a marked increase in the number of voluntarily childless couples suggests that sub-replacement levels of fertility (2.1) are likely to continue into the foreseeable future. Canadian data indicate a rapid increase in childlessness among married women of different age groups during the past twenty years. Whereas it can be argued that childlessness among younger women may simply reflect birth postponement, it is difficult to be satisfied with this explanation for women over 30 years of age. (The Canadian censuses of 1971 and 1981 report an increase in

childlessness among women 30-34 from 9% to 14%; Romaniuc, 1984). Of greater significance are the survey results pointing in the direction of a rapid increase in the number of women who state that they do not intend to have children (Romaniuc, 1984, pp. 32-34).

b) Rate of marriage and divorce

The proportion of ever-married women below the age of 35 has sharply declined since the 1960s (Romaniuc, 1984; Balakrishnan, 1986). The impact of this decline on the decline of fertility remains, however, uncertain. One author suggests that no positive correlation between the marriage rate and fertility can be assumed because of contradictory empirical evidence. For instance, between 1961 and 1973 the marriage rate slightly went up whereas fertility declined (Samuel, 1981).

The rapid increase in the divorce rate (six times as much in 1981 compared to 1960-62, Romaniuc, 1984) may have a greater impact upon fertility. Yet, research seems to be lacking on the effect of the higher probability of divorce upon the fertility decisions of married couples. The rate of remarriage has also declined in Canada lately (Romaniuc, 1984). In both the U.S.A. and Canada, there is a higher rate of divorce for remarriages than for first marriages (Cherlin, 1981; Reed *).

Although demographers agree that such changes in nuptiality patterns will depress fertility rates, they do not explain how. Rather, a simply descriptive correlation leads to the suggestion that increased "exposure" to marriage raises fertility rates! But, the sharp decline in marital fertility rates is an indicator of an increased separation between nuptiality and its "traditional" reproductive function (Balakrishnan, 1986). Westoff and Ryder (1977) have estimated that about 24% of the drop in marital fertility from the early to the late sixties is attributable to a sharp decline in the number of unwanted births due to modern contraception. Whereas the role of contraception is undeniable, one cannot argue it is a cause of declining fertility because it simply allows couples to reach and stop at their pre-established targets of a limited number of children; it does not set those targets. Historically, the control of marital fertility has been effectively practiced in the absence of modern contraception. Wrigley (1985) cites the case of nineteenth century France where marital fertility declined earlier than in other European countries without significant changes in the timing and

* Canadian evidence of trend confirmed by Statistics Canada (Dr. Paul Reed - personal communication).

incidence of marriage. L. Henry (1972) gives two examples of rural eighteenth century France where early marriage with low fertility was found on the one hand, and late marriage with high fertility on the other.

Rates of cohabitation have increased and along with this trend extra-marital fertility has proved to be slightly on the increase (Balakrishnan, 1986) in Canada. However, the rates are so low that they do not compensate for the loss of marital fertility. G. Spanier (1983) estimated that, in the U.S.A., only 28% of unmarried couples (primarily young adults) were raising children.

In Sweden, it has been demonstrated that the declining TFR evident since the forties cannot be attributed to changing nuptiality or increased cohabitation because the latter has always been quite prevalent (Hoem and Rennermalm, 1985).

1.1.2 Factors influencing the intermediate demographic variables of nuptiality

a) Education and age at first birth

Rindfuss et al. (1980) have found that education [1] of the mother influences the age at which she will have her first child but not the timing of subsequent children. Rindfuss et al. (1980) and other demographers maintain that later age at first birth leads to smaller family size and larger birth intervals. However, the explanation as to why this correlation holds is missing. This leads us to consider a particular phenomenon, namely, the negative correlation between the recent labor force participation of women and fertility.

b) Female employment and fertility

The direction of causation between female employment and fertility has been shown to be changing in the course of a woman's life. At first, the presence of small children at home influences employment negatively whereas in the long run, it is employment which influences fertility

[1] Education, in the U.S.A., has been shown to have no direct effect on contraceptive efficacy (Vaughn, 1977) which challenges the myth of high fertility due to ignorance and said to affect lower classes and third world countries.

negatively (Cramer, 1980). However, the causality involved in these relationships cannot be explained if the variable of employment is not both qualitatively and quantitatively defined (Keyfitz, 1985). We do not know whether or not the negative impact on fertility of the recent increase in female employment in western countries is likely to continue, or whether or not this impact has been exaggerated in the sense that it dethroned so-called traditional middle-class 'family' values too rapidly. It is surprising that in a modern context of an homogenizing trend in male and female roles, the subject of male employment's impact upon fertility has not been researched (other than income level). Could it be possible, for instance, that men prefer to forego their fatherhood rather than share in the raising of their now limited number of children?

1.1.3 Demographic transition and the role of mortality

The decline in fertility that accompanied the modernization of Western Europe has traditionally been described in terms of a demographic transition following five phases: (1) a high mortality and fertility phase with stationary population; (2) an early expanding phase with declining mortality and unchanged fertility; (3) a late expanding phase when fertility starts declining as a response to declining mortality; (4) a stationary phase when fertility and mortality are at comparable levels; (5) a low mortality and lower fertility phase with declining population (Blacker, 1947).

Whereas mortality, especially infant mortality, has been proven to have an impact upon fertility in third world countries, the theory does not explain the emergence of the last phase, namely when fertility keeps on declining faster than does mortality. In fact, the demographic analyses which aim at describing the changes in population in Europe during its modernization, do not even provide an accurate historical account of the interplay between mortality and fertility decline. Fertility dropped in some countries before mortality did so (Andorka, 1978). When one considers historical indicators of both mortality and socioeconomic development, no thresholds for the decline in fertility can be found (Coale, 1973). Research with third world countries data conclude similarly that a certain mortality threshold is necessary but not sufficient to affect fertility (Bulatao and Elwan, 1985).

1.1.4 Immigration

Immigration stands as a somewhat separate topic because as the number of immigrants represents a small percentage of the total population of a country it is not a factor that is significantly linked with overall changes in the fertility rate. However, the fertility of immigrants has been of considerable interest to demographers. The differential fertility of ethnic minorities has been of great concern especially in multi-ethnic countries preoccupied with the problem of assimilation and the impact that the differing fertility behaviours of some minorities were perceived to have on population changes, more precisely racial and cultural changes. (cf. Ware, 1975; Yusuf and Rockett, 1981, for Australia; Rindfuss and Sweet, 1977; Rosenwaike, 1973, for U.S.A.; King, 1974, for U.K.; and Beaujot et al., 1982; Verma, 1977, for Canada). In the U.S.A., for instance, Rindfuss and Sweet (1977) have studied the differential fertility of minority groups to conclude, inconclusively, with an assimilation phenomenon as well as differential effects upon overall fertility.) The contradictory findings of a large body of research stem from the unavailability of longitudinal data (B. Ram) and, we believe, conceptual obscurities such as confusion between the analytic categories of ethnic and immigrant status.

Immigrants in Canada, taken as a whole, have traditionally had a lower fertility than the indigenous population (Samuel, 1981) and this is still the case today. The lower fertility of immigrants in general is corroborated by a number of studies. An Australian study seeking to explain this finding studied the impact of immigration on individual fertility and found that the disruption to the life styles and kinship relations had the effect of lowering the fertility of women already married at the time of immigration (Carlson, 1985). However, B. Ram has observed changes in the fertility of immigrants to Canada between 1971 and 1981. He argues that immigrants' fertility has not declined as sharply as the fertility of the indigenous population which leads him to reject the assimilation hypothesis when comparing 1981 to 1971 census data. The rate of reproduction among more recent immigrants has been higher than their predecessors and the native-born population, regardless of the country of origin although the tendency was more marked for Southern Europeans and South Asians and least evident among British, Southeast Asians and East Asians (B. Ram; table 9).

What is most interesting about research on the fertility of immigrant populations in Canada is the revelation (appearing only at the end of Ram's paper) of the variations between groups as well as within groups over time. The problem is that these variations are left unexplained and, therefore, the assertions of Ram concerning differential fertility of different populations cannot be made without further tests. It would be necessary as well to compare the fertility of groups in their country of origin to their subsequent fertility in Canada. Regrettably, the differential fertility of diverse immigrant groups is masked when aggregating data which yields estimates of global immigrant fertility that are of limited value.

1.2 Conclusion

The demographic literature provides an excellent photograph of population movements. But like a photograph, it is a static account of the human dynamics that lie beneath. Demographers are quite aware of this. Accordingly, they quickly find themselves in the realms of economics and sociology in order to complement their understanding of the dynamics of change of population systems. Of course, when they do so, they risk being influenced by their own normative judgements.

In the field of fertility behaviour, it is, as one article's title describes it best, "aiming at a moving target" (Lee, 1980). There is a tendency to overstate the expected number of children during fertility decline and to understate it during rising fertility (Lee, 1980). Furthermore, the sociological, economic and cultural factors that influence the timing of children and the target number of children adults aspire to are not related in a relentless natural way. Increasingly modest targets are, it seems, set in "rationalistic" terms such as opportunity cost, cost of living, life style options, quality of self and relationships. Timing is a more evasive concept as targets keep on declining and the pace of the present makes many future appointments hard to make and harder to keep.

2. PHYSIOLOGY

There has always been, in all societies and at all times, a number of women and men who could not reproduce themselves when they wanted to. The pertinent question to ask in this respect is whether or not their number has increased in the past decades in a way that it could offer some explanation regarding the decline in the fertility rate.

According to research findings by a group of doctors (B. Armitage, 1986) in Canada, it is estimated that 10% of Canadian couples are subject to medical infertility, where infertility is defined as "one year of unprotected coitus without conception". Out of these 10%, it is also estimated by the doctors that 90% will, subsequent to clinical intervention, conceive within two years. Therefore, only 1% of Canadian couples can be deemed to be considered as involuntarily childless. The impact of this one per cent of couples on the TFR can be treated as negligible. Of late, the 10% Canadian couples who are medically (even if temporarily) infertile is presumed to have increased to 15% because of: a) an increase in sexually transmitted diseases, and b) a delayed age at first attempted conception for women with an associated higher risk of endometriosis as well as other reproductive problems associated with aging. This increase is said to be evidenced by an increase in the population of infertile couples seeking treatment in clinics (B. Armitage, 1986). Medically speaking, female sterility or infecundity may appear before menopause due to four factors: congenital reproductive abnormalities, pre-menopausal irregularities, the embryonic mortality of older women, and a high prevalence of infectious diseases (Bongaarts and Potter, 1983; Cates et al., 1985; Retel-Laurentin, 1977). According to medical researchers, only the latter factor varies significantly between populations, being highest in Africa where sterility is epidemic to quasi negligible elsewhere (Bongaarts and Potter, 1983). Therefore, we would have to await further evidence of a dramatic increase in infection-caused infertility in western countries before one can conclude that it has become a major cause of infertility in couples. As natural sterility does not beset a woman at once, increasing age will slowly decrease the probability she has of having a live birth. [2] This factor, however, cannot be related to increased age at marriage, since the average age

[2] The French demographer L. Henry developed a methodology in order to estimate the percentage of sterile couples by age of wife; his method, however, was developed using a naturally fertile population and cannot be applied to modern western societies using contraception (cf. Bongaarts and Potter, 1983).

at marriage has only risen slightly (Romaniuc, 1984), unless one assumes that women who marry in their forties are also those who want to have large families! As one author writes: "Studies conclude that there is a decline of fertility with age but this decline is not precipitous until the woman enters her forties" (B. Armitage, 1986, p. 4). Moreover, there are no absolutely reliable estimates of age-specific involuntary infertility for western populations because of the high rates of contraceptive use (including voluntary sterilizations; cf. Bongaarts, 1982; Bongaarts and Potter, 1983; Campbell, 1983).

To those who suggest that an unwanted side effect of contraception is subsequent sterility, medical researchers maintain that the contraceptive pill does not impair subsequent fecundability (J. Cortès-Prieto et al., eds., 1981). However, there is a slightly higher risk of primary tubal infertility in women who have used the IUD (B. Armitage, 1986).

It may be of interest to note that among other factors affecting physical fertility, two in particular come to mind. First, nutrition is, at times, cited as a potent factor. But, nutrition has been found to create sterility in only one African case study of male children having prolonged severe protein difficiency (Parkes, 1976). Secondly, adverse psychological predisposition may contribute to physical infertility. In this respect, however, no relationship has yet been established between stress and infertility except as a reinforcing mechanism. For instance, it has been shown that medical infertility may lead to stress which either aggravates the existing biological problem or delays the patient's responsiveness to treatment (E.K. Bresnick, 1984; G. Greer, 1984).

In a recent **Newsweek** article (Sept. 1, 1986), it is reported that the percentage of women who are unable to bear children has been falling due to medical advances. The same article shows a chart indicating increases in childlessness between 1960 and 1985 of approximatively over 20% for women 25 to 29 years old, 12% for women 30 to 34 and 4% for women 35 to 39. What is more interesting is that for the two latter age groups, childlessness has declined in the 1970s before climbing again, whereas it underwent a constant rise for younger women (**Newsweek**, Sept. 1, 1986). This could reflect that the later marriage and catch-up phenomenon of the seventies has been abandonned in favour of lesser fertility in the 1980s. Other available measures of the

general incidence of infertility in the U.S. population do not differentiate by age, hence their impact on total fertility decline cannot be estimated (Westoff, 1986). [3]

We conclude along with Dr. P. Bois of the Medical Research Council of Canada, [4] that physiological infertility in developed countries may not affect a large enough proportion of the population that it could be said to have a negative impact on the TFR. The number of children couples choose to have tells the real story.

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[3] It is estimated that 15 or 16% of couples in the U.S.A. experience difficulty in conceiving and/or carrying a baby to term (Westoff, 1986; Burgwyn, 1981); it is also estimated that almost half of them will be treated successfully. However, the U.S. Census Bureau does not distinguish between the voluntary childless and the infertile and, in the recent past, the former often claimed to be infertile in order to avoid the stigma then attached to the choice of remaining childless. Therefore where data seem to exist, they are highly unreliable to estimate the actual number of infertile cases or trends in infertility and sterility.

[4] From a personal interview with Dr. Pierre Bois, President of the Medical Research Council of Canada.

3. ECONOMICS

Beyond the impact of the proximate determinants of fertility and the descriptive correlations between nuptiality variables and subsequent fertility, demographers have examined the socioeconomic factors associated with declining fertility. Let us examine this terrain.

3.1 Aspirations, income, and fertility cycles

Empirically, fertility trends have been shown to be responsive to economic fluctuations at least in the short term. This has led to the business cycles hypothesis which states that marriages and births are conditioned by the state of the economy, meaning that the young will postpone starting a family when conditions are difficult (Dudley Kirk, 1960).

In slightly more elaborate theoretical terms, the "economic squeeze" hypothesis (V. Oppenheimer, 1980) has been proposed to account for the lower fertility of the large cohorts of the baby-boomers caught between higher consumption aspirations - probably inherited from their parents' improved opportunities -, rising cost of these aspirations and more limited economic resources due, in part, to increased competitiveness (Romaniuc, 1984). The consequences of the economic squeeze have been the postponement of marriage and births, smaller target number of children, and the greater labour force participation of women, all leading to reduced fertility (V. Oppenheimer, 1980).

It has been amply demonstrated that in western democracies the relative income of the young (under 25) has fallen over the last twenty years while, at the same time, there has been high youth unemployment, inflation, and high housing costs prevalent since the 1970s in North America and most probably since much earlier times in Western Europe. However, assertions as to the impact of declining youth income on fertility are not immediately convincing. Canadian data on relative incomes in 1960, 1970 and 1980 by age groups show the decline of youth income particularly younger women's income relative to older people's (45 to 54). Two questions come to mind. First, is it true to say that family and fertility decisions are taken below the age of 25 today? The relative income of women of prime working age has risen over the past twenty years and therefore, the relative economic deprivation felt by young women could be offset by the hope of better living conditions later on. Second, a decline in young female income would not have such an impact on

fertility if they expected to enter into the same traditional marriages as did their parents and provided their male partner's incomes were sufficient to support a family including a financially-dependent spouse. Recent attitude surveys among the young show, on the contrary, that many still express traditional views about marriage and family although an increasing proportion of young women in the seventies intended to remain childless (Blake and del Pinal, 1981). One American study reveals that among the young, women are more antinatalist than men, whereas in the prime working age group, it is the reverse; the authors conclude that "...young men and women may be currently out of step in their view of reproduction" (Blake and del Pinal, 1981, p. 259). We do not, however, agree fully with the authors' explanation of this, in that not only women, but both sexes are concerned with sex roles in a mutually reinforcing way: young women do not want to be trapped with children anymore whereas men are very romantic about children before they realize the demands family life may put upon them (in the prime years). The point of this digression is to show that there is more than simply income constraints behind fertility choices (even when attitude surveys are flawed with ambiguities). Romaniuc (1984) reports on a number of attitude surveys wherein people expressed that marriage and birth postponement were caused by economic factors. However, in a recent French study where 78% of the respondents felt that unemployment would cause people to delay having a child, only one-fifth admitted having postponed marriage or child birth because of unemployment (Bastide, Girard and Roussel, 1982).

We do not want to understate the constraining role that income may play on familial decision-making. Yet, the nature of the relationship between income and fertility is far from clear and has led to a variety of contradictory hypotheses as we shall see. Moreover the impact of economic factors on human behaviour when expressed through the medium of aspirations remains virtually unexplained. For what are aspirations made of? According to the business cycle theorists, aspirations are created in our parents' home. Easterlin, the master proponent of the cyclical fertility hypothesis, links the discrepancy between aspirations and economic reality to the cohort size which leads to the mechanistically conceived movement of a large cohort giving birth to a small cohort and so on (Easterlin, 1968; 1973). The fertility rate is here positively related to the relative income of young men. Women have only a very residual role in Easterlin's model, as they take jobs only when their husbands' incomes are insufficient (Romaniuc, 1984). Whereas the Easterlin model has been cited by some to explain the baby-boom years

(Easterlin has forecast another baby-boom in the 1980s!), its explanatory power is limited in view of the simplistic relationships it postulates in the realm of human behaviour as well as in that of economics. Considering the latter, there is the presumption of a Malthusian negative relationship between the size of the population of younger age and the scope of economic opportunities when such a population comes of age. This relationship has been quite insisted upon in economic explanations of cyclical changes in population growth. It is interesting that baby-boomers have been led to believe that their large numbers were at the origin of their present day economic difficulties as their labour force participation rate (especially of women) increased. It is as if they have brought their own revenge by having a smaller number of children, i.e., lower fertility for the future. We suspect that the "numbers" ideology has itself been a potent force in western societies in shaping attitudes toward fertility quite independently of real economic considerations.

Furthermore, the assumption that aspirations are shaped by the home environment was possibly truer in the past than in the present. The greater "independence" and earlier institutionalization of the young makes their material aspirations more difficult to trace back directly to the family of origin.

The determination of aspirations at the micro level stems from a web of complex socio-psychological, political and economic and cultural factors which economists have subsumed under different preference functions as we shall see shortly. Of greater interest is the literature that relates more major socio-economic and political macro changes to micro expectations.[5] For example, Smolinski (1971; in Andorka 1978) explains the sharp fertility decline in Poland in the sixties in terms of the new impact of material mass production and education on the creation of material and spiritual needs which are in conflict with high fertility among the young. Clearly, when compared to both past socialistic rationning and strong State intervention in favour of families, there is little doubt that changing production forces do have an impact on individual decision-making.

[5] Studies attempting to relate urbanization and modernization to declining fertility use similar forms of reasoning; we shall explore them in the sociological context.

Yet, the problem still lies in the nature of the change in values that follows infrastructural variations. Where do the conflicts take place and how are they resolved? Can consumer goods be substituted for children? Blake (1968), a strong critic of the economic theories of fertility, argues justly that they cannot and that "families are influenced in their decisions on fertility by the norms and values of society".

As the subject of values lies beyond the realm of economics per se, we intend to take it up in a coming section. The interesting point will be to try and comprehend how much present "economic" values have penetrated and shaped what we have traditionally believed to be non-economic aspirations.

Economists are aware of the existence of intermediate variables between economic indicators and human behaviour. In the field of fertility studies, they have resorted to the concept of the shadow price or opportunity cost of children which subsumes a host of these intermediate variables between income and fertility. However, the shadow price is a function of constraints as well as of values and economists seldom venture into the latter area because of quantification problems. As such econometric models have a neat logical appeal yet their explanatory power is limited because the explanation of behaviour or decision-making without reference to the values expressed by those behaviours and decisions remains essentially a shadow-boxing exercise.

3.2 Female labour force participation

The concept of opportunity cost has been particularly useful to economists in order to explain the negative correlation between female labour force participation and fertility. Empirical models such as the Butz and Ward (1979) countercyclical model have extended the Easterlin hypothesis to account for a negative relationship between wife's earnings and fertility as well as female employment ratio and fertility as counteracting the positive influence of husbands' wage. [6] The interesting point in this model shows the opposite effects male and female incomes have upon the demand for children due to sex role inequality. Rising male income will increase the demand for children as father's time is not generally recognized as an important input in childrearing. Conversely, rising female income will increase both the indirect and direct costs of children and decrease the demand for them because

[6] Whereas this model was tested in the U.S.A., it led to more ambiguous findings in Canada (B. Ram and J.A. Norland, 1982).

of the increased opportunity cost of time of employable women. The Butz and Ward model thus subsumes the role of higher education of women in shaping fertility expectations. Underlying this model is an economic theory of consumption that assesses the higher opportunity cost of children for women as responsible for declining fertility (Mincer, 1963). The validity of this line of reasoning could only be tested if a lower opportunity cost of women's time could be demonstrated to be conducive to renewed high fertility in the long run, not just over a short term. But the model does not address itself to the long term trend and we strongly doubt that the change in sex role expectations underlying the increasing shadow price of women's time could be easily reversed by a manipulation of external economic (or other) constraints. A one recent attitude survey indicates the "...assessment of the costs and benefits of parenthood are more closely related to sex role attitudes and anxieties than to any single traditional background characteristic." (Blake and del Pinal, 1981).

Whereas Easterlin left women's occupational roles completely outside fertility decisions, Butz and Ward imply opposite effects of male and female incomes with the assumption that the decision will ultimately be taken by the woman who has more at stake in the production of children. Still, both models suggest a largely individualistic and economically rational model of decision-making with regard to fertility thereby understating the social structural forces at play.

3.3 The quality of children hypothesis

G. Becker in his Treatise on the Family (1981) manipulates the concept of opportunity cost in an ingenious way trying to link both consumption and investment theory. He also attempts to explain apparent contradictions in the relationship between income and fertility away from the abstract "pure income effect" to opportunity cost via an interaction between numbers of children and child quality. The logic of his fertility model is derived from a basic constrained utility maximization function: $U=U(n,q,z)$ for any given household where n is the number of children, q is the average quality per child and z is an aggregate of all aternatives to children, namely a "living standard" (Becker, 1981). Under an income constraint, given a particular standard of living, only a certain amount of interaction is possible between n and q (Becker assumes a fixed minimum quality per child, per household that varies between households). Changes in constraints, such

as the wife taking a job, will reduce the number of children if the quality of each child has to be maintained because the opportunity cost of her time (a major input in child raising) has risen. This elegant way of reasoning allows Becker to explain both high and low fertility in western and non-western countries as well as, so he claims, the fertility decline traditionally associated with the factors of modernization, urbanization etc... For example, as the number of children increases, the quality per child has to, it is argued, decrease. A small number of children should allow the quality to increase because of the very nature of the interaction between n and q unless interactions are discovered between number of children and z. This is where the model of Becker hides more than it explains because mathematically, interactions should take place between the three variables in the equation, namely n, q and z unless it is assumed that z is fixed, i.e., that material aspirations (or more generally, non-children aspirations) do not change with changing constraints, which is improbable. Another major obscurity in Becker lies in the implicit nature of the utility function itself. It is not at all clear whether the relationship between n, q and z is multiplicative or additive. It seems actually to be treated both ways in his book although, since Becker never considers voluntary childlessness, n can never equal zero which would make a multiplicative utility function redundant. The same is true of quality. Quality is in fact a very ambiguous concept in Becker's model, in the sense that it is assumed never to be nul. Becker has been criticized by some (Andorka, 1978) on the ground that he treated children as commodities. This is an unfair criticism because he makes two humanistic assumptions. First, he assumes that parents decide on a certain amount of quality that is necessary to raise a child, independently of the number of children. Second, he treats other goods and services z as a separate, largely unexplained category "because there are no good substitutes for children" (Becker, 1981, p. 95). His concept of quality also involves not only the material quality that can be bestowed upon a child through better food, clothing, education and so on but also the emotional quality of love and care. The problem with Becker's model lies somewhere else: his very use of a maximizing utility function. Apart from the unresolved interaction problem, the parameters for each of the variables are not known. What happens to children if z is maximized to a high degree, i.e., if it takes almost all of a family's constrained wealth? [7] The utility function assumes a set of

[7] Wealth is defined in the largest sense of the term by Becker and includes one's time and other resources.

preferences but we do not know what they are all about. This is apparent when we realize that the model offered does not explain the fact that some couples have chosen a lifestyle free from children, that they do not consider the psychic rewards of raising children as being important and that they fulfill their emotional needs in other ways, ususally by emphasizing a better conjugal relationship (Ramu and Tavuchis, 1986). At the most, Becker's model can partly explain the virtual disappearance of the family with several children to the one child family.

The other major criticism of Becker's approach lies in its underlying conception of rationality based on utility maximization. The decision to raise children is one that carries long-term consequences. Yet, the principle of utility maximization implies that one can assess the immediate and future costs and benefits of one's decisions. However, is it realistic to think that prospective parents actually have a knowledge of the constraints they will be subject to 20 years from now. Or is it not more likely that people "satisfice" by setting themselves goals or targets for the present as well as the future? (H. Simon, 1986) The "satisficing" principle implies that some goals set by individuals are more important than others. This suggests that individual energies are first spent on primary goals and that only if surplus energies remain, secondary goals can be looked after. Thus it is quite common today to hear young couples say that they will have a good job, a nice house, a car, enough savings for a yearly vacation and if all this is satisfied a child and a pet to complete the ideal picture? [8] Human beings' minds function more by sequential ordering of preferences than by the maximizing principle, although combinations may be possible like in the case where people decide that they cannot afford more than two children because they could not offer them the same quality of, say, education when expensive education is an item they have ranked high on their preference list. This brings us back to the preference and value question which goes beyond the domain of strict economic reasoning.

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[8] Becker would perhaps answer us here saying that it is the quality of children concept which will force some people to forego parenthood altogether (e.g., the dubious answer: "I can't afford children."); it still remains clear that children stand last on some priority lists and that the quality (supposedly for the child's sake) is chosen by the adults not the child.

3.4 Beyond economics

One point should be made clear at the onset; no one would imply a direct substitution effect between goods and children as this would mean that children are treated simply as consumption goods which is neither fully the case empirically (Blake and del Pinal, 1981 [9]) nor theoretically, at least in Becker's model. A derived substitution problem between goods and children arises, however, when income and time are firstly and increasingly spent on goods and their acquisition which leads to having less of either to spend on children. This follows from the income identity equation and the notion of budget constraint. Therefore, if economics does not tell us everything, it is still illuminating in arguing that we live in a constrained economic environment which sets limits to the statisfaction of our desires. What it does not address is the nature of the social constraints that lie behind the ordering of our desires/ preferences.

Social scientists have been very shy on this issue and we have not found one attitude survey which would try to explore the preferences of couples regarding their parenthood and other choices. The same lack of research is expressed by Lee and Bulatao (1983) in an excellent review article. Both the economic and sociological literature does not address the question of "tastes" for children. Instead, it is the demand for children that is addressed and there are some missing links between demand, as expressed through fertility expectations and actual fertility behaviour (Lee and Bulatao, 1983). In fact demand is a more global concept that involves at least four dimensions: direct economic costs and benefits, opportunity cost, tastes, income and wealth effects. Usually, only economic indicators are accounted for in the determination of demand because they are more directly measurable. As far as "tastes" are concerned, they are usually ignored because it is not known whether a change in fertility behaviour reflects a change in the material constraints of choice or in the values per se (Lee and Bulatao, 1983). And since, as the authors add (and we have noticed ourselves), no comparisons are made between children and competing sources of satisfaction, little is known about tastes. Evidence is present of differential fertility behaviour between

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[9] This attitude survey reveals that Americans treat their children both in terms of consumption and investment (according to the responses). The interesting aspect of this study is the authors' endeavour to distinguish between consumption (immediate gratification) and investment. However both conceptually and empirically, ambiguities remain.

religious and ethnic groups that must reflect tastes when economic circumstances are held constant (McClelland, 1983).[10] As Caldwell's research in West Africa demonstrates, urbanization, industrialization and technology do not, of themselves, bring about a decline in the fertility rate (Caldwell, 1982). According to Caldwell, two factors are at work, an economic one and an ideological one and he puts greater emphasis upon the latter. As economic change takes place and production is shifted from the household to the market, the status of children changes which implies that familial wealth will flow only from parents to children rather than both ways (Caldwell, 1982). The wealth flow concept goes one step beyond the narrow "disutilities" approach of earlier economists (such as Leibenstein, 1957; 1974) which considers the direct costs of children or the indirect ones of opportunities forgone. With changing wealth flows, the material dimension of the family that evolves over time is eroded as market exchange between individuals comes to predominate. But Caldwell wants to go beyond infrastructural changes to account for the differential impact of modernization in different cultures. He introduces the concept of ideology as having a major influence upon fertility through its interaction with the infrastructural variables of urbanization and industrialization. Therefore, for Caldwell, it is not just changed economic circumstances nor structural ones (mechanically derived from the macro socioeconomic changes brought by modernization) which affect fertility outcomes but the ideological meaning within which these changes take place. The exact role and place of ideology is, however, never made explicit by Caldwell. Instead, he uses this Weberian approach to establish a West non-West polarity (cf. De Vos, Clark and Radhakrishna Murty, 1987, for a critique of Caldwell). Whether and how the Weberian paradigm can be applied to fertility decline in western societies deserves further exploration and elaboration.

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[10] Studies of fertility differentials where ethnicity is the most determinant independent variable have been conducted in LDCs; cf. for S.E. Asia, Suparlan and Sigit, 1980; Aziz et al., 1980; Alfonso et al., 1980; Chang et al., 1980; Prasithrathsint et al., 1980.

3.5 Conclusion

It follows from what has been considered in this section that direct or indirect income effects affect both material and non-material aspirations only in part.[11] How material aspirations affect tastes is another important but, unfortunately, obscure area of research because so far aspirations have not been assessed directly. As Lee and Bulatao (1983, p. 261) put it "... higher goods aspirations would imply, **ceteris paribus**, weaker tastes for numbers of children". This has been observed in the modern societies of Europe (cf. Dumont, 1890; Banks, 1954; Andorka, 1978; Demény, 1968) and America (Lindert, 1978) as well as in some LDCs (cf. Freedman, 1975, for Taiwan). It has also been found in a sample of countries that, where more concern over the restrictions put on parents by children was expressed, fertility tended to be lower (Bulatao, 1979). Lee and Bualatao (1983) add: "these findings could also reflect price and income variations". Beyond price and income variations, what constrains our desire for children? In western societies, do we limit or forego fertility because of the negative constraints children are perceived to impose upon us? And if so, can these constraints be studied in their own right or are they not necessarily relative to individual preferences and opportunities for a more glamourous lifestyle? The nature of the relationship between the meaning of parenting and non-parenting lifestyles could perhaps help us locate these ideological shifts. As recent evidence suggests (Veevers, 1980; Ramu and Tavuchis, 1986; **Newsweek**, Sept. 1, 1986), there is a growing trend towards choosing the "opportunities" lifestyle expressed in terms of "freedom, self-actualization and conjugal intimacy" (Ramu and Tavuchis, 1986).

As to what these terms mean, Ramu and Tavuchis (1986) could obtain some direct answers from childless (by choice) respondents pointing in the direction of the primacy of fulfillment of one's egoistical needs. As one woman put it "My husband satisfies all my needs and I don't think a child can do what he cannot" (Ramu and Tavuchis, 1986, p. 107). The study by Ramu and

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[11] The opportunity cost of time concept is a good example stressed by N. Keyfitz (1985) whereas productive time (in the market sense) is what gives it its value; it is nevertheless true that the same people who refrain from time-consuming activities (such as childrearing) because of the value of their time will not hesitate to waste it in unproductive activities, such as TV viewing. Why? Is consumption more gratifying than investment (in relationships, through emotions)?

Tavuchis reports several interesting, although disturbing, conclusions, namely a) that most of us are planners and this characteristic is more pronounced for those who opt for non-parenthood (82.2% of childless couples had made a firm joint decision as against 63% of parents); b) that the decision not to have children is accounted for in terms of economic rationality; and c) that affective reasons for having children predominate over generativity and other symbolic status-related reasons. There is nothing surprising in the last finding, since our social structure does not allow us to acquire higher social status through our children anymore (P. Ariès, 1980). The "affectivity" variable deserves, however, to be analyzed further because some of the responses quoted by Ramu and Tavuchis point more towards the psychological consumption of children than toward real emotional investment.[12] Assuming for a moment that there is a shift of motivation away from investment (economic, social and finally psychological) toward the 'consumption' of children (meaning that children are essentially entertaining) then there arises the possibility that adults will begin to compare children with other consumption goods with which we increasingly surround ourselves. Some may recognize that these other goods can be easily disposed of or replaced; children cannot.

Finally, the processes of modernization that have affected the legal, economic, political and societal context within which the nature, quantity and quality of our relationships have changed dramatically need to be considered. For this task, we now turn to sociology.

[12] Such as "it is fun to play with them" or "they help me to relax after a day's monotonous work" (Ramu and Tavuchis, 1986, p. 112).

4. MACROSOCIOLOGY

4.1 The unit of analysis

When criticizing the economic theories of fertility, Blake (1968, quoted in Andorka, 1978) wrote: "... a theory of reproductive motivation is at the same time a theory of the family and society". Family sociologists have, with reason, complained about the demographers' attempts to link aggregate sets of data to individual properties.[13] Thus, sociologists take the family (or family forms) as the smallest unit of analysis in order to explain fertility decisions. The focus on the family also means that other reference groups the individual may belong to are not as important as the family. But, what if, one (or several) of these other groups had taken precedence over the family in recent decades? Blake (1968) would argue (as she argued regarding children) that family relationships are special and cannot be replaced by, let us say, relationships at work. This is true; however, suppose our self-valuation came more from sources other than our intimate family ties? Would it not make more sociological sense to see how values may have drifted away from the family by examining simultaneously the socio-structural changes that accompany modernization, post-industrialization (or whatever stage a society is at) and the socio-psychological changes in our self-valuation? Psychological explanations with descriptions of individual personality traits do not tell us about what makes us different, namely our complex societies. Macro-structural studies tell us that we react to societal stimuli in predictable ways and that we are in some fashion determined. But as social beings, are we not both determined by society and determining of social values? How can we conceptually separate our creations from our mentalities when they are the embodiments of each other?

In family sociology, there is enough evidence today to say that 'the family' cannot be treated as a 'safe' unit of analysis for the study of fertility. Even demographers (cf. previous section on demography) have de-emphasized the direct relationship between nuptiality and fertility. "The family that does not reproduce itself" (as N. Keyfitz titles one of his articles) is a family the members of which derive a sense of individual value from other societal relationships than traditional filial ties. Those who

[13] One exception is N. Keyfitz who seeks to use the family as the unit of analysis.

choose the childfree lifestyle emphasize careerism as the main motivating force in their lives, where career is not seen as a constraint upon alternative lifestyles but rather as a condition for happiness and creativity (D. Burgwyn, 1981). This 'creativity', it is argued by the childless, is also manifest in a better marital relationship. Unfortunately, divorce statistics show a slightly higher rate among childless couples than among parents (Romaniuc, 1984, p. 99) although this may simply reflect roles of greater dependency created by the presence of young children.

An alternative view of some sociologists is that the 'childless family' is nothing more than another family form reflecting a state of transition brought on by sex role change (McDaniel, 1986). This sounds like an attractive proposition. But it remains to question the nature of the future of the family(ies) in a society marked by an every-increasing number of singles. Here it needs to be emphasized that the notion of freedom implied in the defence of multiple family forms seems to deny the involuntary aspects of familial break-up, of monoparental status and the hardship it imposes on women,[14] or simply of singleness. The sex role change hypothesis aiming at recreating the family in a more egalitarian form suffers from some flaws as it attempts to explain the decline in fertility. One would be tempted to argue that a lack of socioeconomic support for working women (including their undoubted discrimination in the work place [15]) does constrain women motivating them to reject having children if they want to have a career. A lot has been demonstrated concerning the plight of North American women who attempt to combine career and children (Hewlett, 1986). However, and despite the hardships infrastructural barriers may cause to individual women, it seems to us too simplistic to establish a direct cause-effect relationship between infrastructure and fertility behaviour. Thus some European countries offer much better family support systems and conditions of working mothers than in North America (Hewlett, 1986).[16] Yet, paradoxically, many such countries

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[14] S.A. Hewlett (1986) reports that 77% of the U.S.A.'s "poverty is now borne by women and their children". (p. 14) From an interview with Maria Morales, Bureau of the Census, Department of Commerce, Washington, D.C., January 4, 1985.

[15] "But it is less well known that the United States has one of the largest wage gaps in the advanced industrial world and is one of the few countries where the gap between male and female earnings has not narrowed over the course of the last twenty years" (Hewlett, 1986, p. 13).

[16] "These other advanced democracies have also instituted family support systems, such as paid maternity leaves, child allowances, subsidized day care,

have registered a steady fertility decline. A similar situation is noticeable also in Quebec (the province where families have enjoyed one of the best support systems in Canada) but which has also shown the sharpest decline in fertility in Canada in recent times.

Research is lacking in trying to untap what we would hypothesize as being a growing convergence of the mentalities of parents and childless couples, both of which now express motives of self-gratification to explain their decision.[17] The answer to this question may suggest the cogency of a cultural lag hypothesis in the values attributed to children. In attitude surveys of parents, reasons for having children often seem to invoke an antiquated belief in the future benefits (economic, social, psychological[18]) they expect to derive from this socioeconomic 'investment'. Whether this belief reflects their true motivations behind having children remains to be looked into. Therefore the cultureal lag hypothesis remains open.

Sociologists have observed over time the withering away of many of family's old functions, namely, economic, political, legal and social. What then does macro sociology have to offer towards an explanation of the disappearance of perhaps the last (but not the least) familial function - having children in the context of a family, however defined?

4.2 What do we know about macro sociological change?

Sociological insights have been useful in contributing to an explanation of the demographic transition associated with modernization and the concomitant emergence of the nuclear family.[19] The conventional sociological explanation went this way: modernization meant the emergence of a

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and free health services, all of which considerably ease the lives of working parents. In contrast, more than 60 per cent of working mothers in the United States have no right to maternity leave" (Hewlett, 1986, p. 15). Whereas Canadian families enjoy the privilege of free health services over their American counterparts, it remains the case that regarding maternity leaves and subsidized day care, Canada does not differ substantially from the U.S.A.

[17] It is perhaps a mere question of time in one's lifetime as to when the "opportunity" lifestyle will catch up with us. There is a noticeable trend away from parenthood documented by an increase in the number of intentionally childless couples (Westoff projects that in the immediate future 10 to 15% of all couples will choose childlessness; in Veevers, 1980).

[18] What is meant here is company from children in old age.

[19] However, there is still a lot of controversy as to the usefulness of this

rationalistic social order where, for the sake of efficiency, economic transactions would take place in the market, away from the hazards and inefficiencies of household production. As a result of technologically-induced increases in productivity, family labour would become redundant, especially that of children. Production diversified with technological change into non-agricultural production, namely industrial. Urban centers had to be created wherein to erect the factories and keep at hand the new, non-kinship-based labour force. Urbanization meant that many families had to uproot themselves to travel to foreign city environments and sometimes, to dismantle kinship ties in the process. Where the agricultural sector remained, (it stayed larger in countries where the industrial revolution had been less successful), it became increasingly subject to exploitation by a class of businessmen who would sell the products of the farmers in the new urban markets for a profit. For those who were unsuccessful in getting an urban job, poverty increased, pushing them abroad, especially to the New World. For others who did not have the same adventuresome spirit, increased poverty did not seem to lower their fertility. Indeed, in Europe, fertility had traditionally been higher in the countryside than in the cities.[20] The small nuclear family, it is believed, was thus born out of the interrelated processes of industrialization, rationalization and urbanization. The family transplanted from a rural to an urban setting lost its previous functions of production, recreation and education and intergenerational support which were taken over by the evolving institutions of the emerging modern state.

Building on this classical model of modernization, current sociological attempts to account for declining fertility are often confined to descriptive and piecemeal statistical correlations between for instance, female labour force participation rates and fertility decline conceived within a theory of changing sex roles. Alternatively, at a more elaborate theoretical level, the increasing participation of women in the labour force

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theory in view of the fact that fertility change did precede other changes in certain cases (Andorka, 1978) and that attempts to return to the extended family occurred in the most modernized countries, e.g. 19th century U.S.A. An excellent critique of the theory is given by Caldwell (1982, Chapter IV).

[20] G. Becker predicts that rural fertility will in fact be lower than urban because of the greater difficulty rural parents have in maintaining child quality away from urban facilities; this has to be understood according to Becker as an added disincentive to the economic redundancy of rural children in post-capitalist societies.

is situated within the context of broader societal changes. However, the intermediate concepts introduced in order to account for the empirical trend of increasing female labour force participation within broadly conceived processes of modernization remain vague. Consider, for example, the attempt of Cogswell and Sussman (1979) to examine the linkage between the evolution of the family within modern societies by reference to a too familiar and highly ethnocentric conceptual distinction between traditional homogeneous societies and modern heterogeneous societies. The authors claim that their interest is theoretical rather than empirical. As such, they neither provide an examination of current fertility trends nor do they probe the historical evidence to test their theoretical conjectures about the effects of modernization and the character of the so-called traditional homogeneous society is largely assumed. According to Cogswell and Sussman, the negative correlation between the labour foce participation rates of women and fertility is accounted for by a proliferation of diverse life experiences encountered by working women in the context of a social system characterized by high levels of social differentiation in which individuals occupy a number of discrete roles. According to the proponents of this theory, this heterogeneous foundation of lived experience broadens the range of lifestyle options and reduces the probability of childbearing. They state that: "families experiencing heterogeneous contact are more wordly and seem to make more rational choices, one being the decision to control their fertility." (p. 185) It is, therefore, assumed, somewhat curiously, that a more heterogeneous foundation of lived experience accounts for the uniformity and homogeneity of a trend that sees the vast majority of an adult population deciding to behave in an identical fashion when it comes to reproduction. A broader range of choice leads, it seems, toward compliance with a strictly limited range of 'rational' options. The appeal of the theoretical account proposed by Cogswell and Sussman derives from the fact that they have attempted - within the limitations of their evolutionary and structural model - to establish a relationship between the broad contours of social and economic circumstances and the personal motivations of individuals who both reflect and shape those circumstances. Nevertheless, in seeking to establish such a relationship, assumptions which are questionable and, indeed, testable are largely taken-for-granted. It is assumed, for instance that a) the workplace is a relational context, b) that co-workers hold more diversified values than, say neighbours, and c) that if a) and b) are correct, possibilities for friendship at work can make family relationships redundant. Furthermore, it is assumed

that highly differentiated societies increase the range of choices available to individuals and that decisions taken with regard to fertility are largely voluntary. It is, however, possible that women entering the labour force may expect social recognition or higher self-evaluation which is increasingly unidimensionally defined through one's labour force status. We may then ask: is it a movement from traditional familial homogeneity to modern work-related homogeneity? Also labour force participation may itself be promoted by expectations of money incomes either because of economic necessity or because of the fulfillment of new material needs or the ideology of self-reliance and the risks that befall those who are not economically independent. They may equally search for an escape from loneliness in a society increasingly centered around wage labour and market exchange at the cost of other areas of human experience, especially the world of children. These motivations and expectations (there may be others) may act singly or in combination. However, this is just an example to show that an adequate conceptualization of the complex relationships between personal aspirations and social structural forces is missing such that merely descriptive correlations are far from self-explanatory. Moreover, without a better understanding of that relationship, we will not be able to account for the exceptions to the general empirical trends. Cogswell and Sussman give a few, namely, ethnic ones (the Blacks in the U.S.A.). Other authors have reported great variations in the relationship between modernity variables and fertility (cf. Lee and Bulatao, 1983).

Increased social mobility is another modernity variable that is interesting in its relation to fertility. Planned or actual upward social mobility has been inversely related to fertility. Arsène Dumont (1890) first suggested that fertility declines with expectations of upward mobility. He was alluding to two motivations among the lower classes in the 19th century, namely, a demonstration effect - since fertility first declined in the upper classes - and a socioeconomic investment effect, that of enhancing child quality to allow him to attain a higher status.[21] Of interest in what Dumont termed "social capillarity" is the social valuation of children as a way of ensuring the upward social mobility of a familial lineage. P. Ariès (1980), in a recent article, suggests very plausibly that this dimension of child valuation has vanished today and that self-fulfillment is now sought in one's own lifetime. This idea gives us interesting sociological, psychological and

[21] This concept of quality differs from Becker's who was referring to unconditional quality.

philosophical[22] insights into contemporary attitudes towards fertility. Considering solely the sociological aspect for a moment, it seems evident that the notion of status has lost the temporal dimension it used to have. If social status has lost its intergenerational dimension, this implies that it has lost much of its original meaning to become but a pale reflection of highly unstable temporary alliances at the mercy of quick market fluctuations. The relational dimensions of status (as defined by Weber) are now broken into the unidimensional, materialistic and instrumental dimensions of self-valuation, directly engineered by the workplace. It is quite possible that the increasing ambiguity surrounding the definition of status groups and classes today in post-industrial societies reflects this process through which individuals become defined increasingly in terms of their position relative to the labour force and become isolated and atomized. The possibility arises that it is perhaps the sociology of work that might well provide more insights into declining rates of fertility than does the sociology of the family.

Finally, empirical studies of social mobility and fertility yielded conflicting results in the sixties and early seventies (Cogswell and Sussman, 1979) and now appear to have disappeared from the research agenda. It is true that opportunities for upward social mobility have greatly diminished today. Research is lacking as to the impact of this phenomenon upon declining fertility. Taking Dumont's line of reasoning, it would be of interest to see what effect the threat of downward mobility (from increased occupational insecurity) may have on limiting the number of children per family. A combination of other factors would have to be considered as well, namely, for example, the conditioning of lifestyle expectations, independently of future status mobility. Beyond these conjectures, Ariès' idea of fulfillment within one's lifetime leads, if carried to its logical extreme, to further speculations about the possibility that the trend which has seen the eclipse of large families by a preference for two children and today's increasing preference for one child may yet be supplaced by a more generalized preference for no children. Increasingly, rationalizations are being printed that try to destroy the old-fashioned so-called "myths" of the importance of sibling relationships to human development (Hawke and Knox, 1977; Falbo, 1984). Increasingly, traditional fertility-minded couples are 'hesitating' to make the jump between one child and two children. On the other hand, a growing number of professionally successful couples are expressing their conviction

[22] The two latter aspects will be elaborated upon subsequently.

that "Three's a crowd" (**Newsweek**, Sept. 1, 1986). Whether the one-child family is a transient phenomenon leading to an eventual increase in childlessness can only be revealed by a systematic study of preferences and their changes over time.

5. POPULATION POLICY AND FERTILITY

The declining fertility rates of western nations to below replacement levels have opened a new debate as to how and where the State could/should intervene to remedy a situation that is perceived to put at risk the future vitality of western societies by virtue of attrition through aging. The introduction of pro-natalist policies confronts two issues: first, the relation between the State and the individual, and second, (and most importantly) the complexity of the deeper motivations underlying fertility decisions.

Taking the first issue, the question of the role of the State in western nations is in question because of structural and ideological concerns. The structural problem arises in pluralistic democracies because of their emphasis on civil liberties (C. A. MacIntosh, 1981). Ideologically, western nations have, for long, advocated anti-natalist policies to control population growth in the third world. This has led to a belief sustained by a negative association between population growth and economic development which may be hard to reverse. At a time when contraception is said to be making inroads in the less developed world (W. Parker Mauldin, 1983), the developed world is facing high youth unemployment along with the rapid introduction of labour saving technologies resulting in more frustration and uncertainty among the population. In such a context how will the State engineer a pro-natalist move?

Under present circumstances, it is important to consider how concerns over the future dangers of population decline will be expected to influence the micro level of individual choice. Since personal decisions, especially in relation to fertility decisions, are not generally determined by macro concerns, it is not surprising that population issues have not received much attention in North America. Of late, whatever pro-natalist policy directions have been taken, they are of two types: direct and indirect. Among the direct policies, there are incentives of a financial nature, e.g., increased family allowances, baby bonuses (such as in France), tax rebates (France) and low interest loans to families (W. Germany), work-related incentives largely addressed to women through extended maternity leaves (France, Italy, Sweden[23] flexible work schedules, parental insurance paid by employers and parental leave related to a child's illness (Sweden).

[23] Sweden gives the option of paternity leave.

The indirect policies have involved incentives such as subsidized housing, day care, recreational facilities for children (W. Germany). These incentives have been introduced in Western Europe in packages with diverse emphases. For instance, France has put the emphasis on direct financial assistance especially for the third child whereas West Germany is aiming at creating urban environments "friendlier to children" (C.A. McIntosh, 1981). The incentives have largely been targeted to the individual rather than the family, except in Sweden.

In Eastern Europe, pro-natalist policies have been more explicit and have used negative as well as positive sanctions.[24] For instance, severe restrictions on the use of abortion have been introduced in Romania, Bulgaria and Hungary. Divorce has been restricted and Romania has been taxing childless adults over 25 years of age who hold jobs (Romaniuc, 1984).

5.1 Effects of pro-natalist policies

It is generally recognized that pro-natalist policies are effective only to the extent of influencing the timing of births rather than the actual number of births (Romaniuc, 1984). Indeed, this seems to have been the case in Eastern Europe where both negative sanctions and positive incentives created an increase in the TFR in the seventies followed by a decline, albeit to a rate higher than the one prevailing before the introduction of the policies. In this respect, one author assessing the Eastern European experience remains sceptical and concludes that the births may have been previously intended (Roland Pressat, 1979).

In Western Europe, there is no way of making any assessment of the efficacy of pro-natalist policies as the efforts have been too indirect and in some instances, too recent (W. Germany); meanwhile the TFR has continued to decline. In any case, and whether it be in Western or Eastern Europe, a

[24] In Western Europe, as well, attempts were made (such as in nineteenth century France, cf. C. Ract, 1901) to transfer taxes from large to small families in order to boost the fertility rate; however, the very proponents of higher fertility, the clergy, opposed the legislation as it aimed at over-taxing bachelors over 30 among which are the priests. We do not know whether the more recent French taxation, which is proportional to the number of children will work as an incentive to increase family size. In fact, this is doubtful as indirect taxation is, in France, one of the highest in the western world making the raising of children a very expensive proposition.

suitable research design with sufficient data of reasonable quality is difficult to obtain to make any causal link between pro-natalist policies and fertility.

There is then a more fundamental question as to whether fertility behaviour can be regulated at all. Except in the extreme case of absolute individual commitment to the State, can the aims of the latter be achieved by the former. Could the aims be made to coincide without assuming the existence of some "conscience collective"? There are obstacles to this line of thinking. The "Irony of democracy" [25] is such that it is not the people but the pressure groups who make the ground rules of decision-making. The very thought of introducing pro-natalist policies, let us say in Canada, can only exacerbate conflicts between pressure groups with a potentially detrimental effect upon the meagre progress of the women's movement achieved during the past two decades.

Before introducing pro-natalist policies, it is appropriate to ask whether people have any desire to fulfill the aims set forth by the politicians. [26] For instance, a study of Quebec in the seventies revealed that about half of the women surveyed expressed no interest whatsoever in having an additional child, even under the best of circumstances (Henripin et al., 1981). The same study also found that age was a decisive factor in the responsiveness to policies, the youngest being the most receptive. This poses a problem as to whom to address future pro-natalist policies since marriage is increasingly postponed!

Regarding those who advocate policies with less of an emphasis on individual incentives and greater attention to infrastructural changes in order to create an environment more "friendly" to children, empirical evidence fails to support their line of reasoning. Low fertility is not necessarily correlated with the absence of infrastructural material support mechanisms such as day care, parks, housing, etc... A comparison of Canada and Sweden with similar fertility rates and very different levels of support to families

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[25] cf. T.R. Dye and L.H. Zeigler, 1975.

[26] In view of some recent dramatic changes in reproductive behaviour in Canada, one would be tempted to answer the question in the negative. Quebec is a case in point. In 1971, Quebec which was lagging far behind the U.S.A. in the use of contraceptives, has undergone what the authors (Henripin et al., 1981) call "a true contraceptive revolution" within five years with the use of sterilization at all levels of parity (70% of sterile couples in the sample were voluntarily sterilized) and independently of language, religion, socioeconomic standing and work status.

is sufficient proof of this. The United States has been in the western world, the most deficient in supporting families (from maternity leave to medical costs).[27] Nevertheless, they have had fairly high birth rates in the recent past compared to many Western European nations with much stronger packages of family supportive policies.[28]

In Canada, it seems ironic to hypothesize about what would be the impact of pro-natalist policies when a climate of restraint is in fact withdrawing services to families (N. Guberman, 1987). As R. Glossop (1986, p. 15) writes: "All too often, politicians, policy-makers and planners seek to rediscover the inherent strengths and capacities of families as a justification for the withdrawal of costly services that were once provided for free by family and community members but have now become the products and services of the formal marketplace and a drain upon the public purse." We wonder, at this point, whether the confusion surrounding the issues of family policy in Canada[29] is not itself a reflection of the diminished sphere of influence the family occupies in our society.

Leaving country-specific considerations aside, it cannot be assumed that infrastructural changes will have a direct causal effect upon the motivation to have children. As one author puts it, "if the social importance of children is recognized, there should follow a transfer of incomes from families and individuals without children to those with children" (R. Beaujot, 1986). Thus the success of pro-natalist policies depends on the recognition of the social importance of children. This social importance is, in turn, the consequence of a legitimation process which lies in the value system of a society, not in State legislation. Therefore, the present root of the decline in fertility in western cultures has to be sought in the diminishing sphere of human affectivity: the isolation of the family from its larger social ties in the 18th and 19th centuries that has been followed by the isolation of the individual from the family in the 20th century (P. Ariès, 1980). The place of children in our society is of course partly a question of

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[27] cf. Hewlett, 1986; L. Van Gelder, 1986.

[28] France is an interesting example where the sometimes unavowed but always persistent dream of several politicians has been to encourage the birth of the third child without success.

[29] The present confusion serves to deny the valuable efforts made by the government of Quebec in the PQ's Green Paper on Family Policy (1984).

material support but this support has to be meaningful within the psycho-cultural map of our emotions, sentiments and aspirations as people and as a people.

6. FURTHER OBSERVATIONS

This paper has attempted to critically summarize the contributions made by the main disciplines of the social sciences to an explanation of the decline of fertility in western societies in general and in Canada in particular. Although the decline of fertility in the West is by no means a new phenomenon, two facts today point more decisively to its relentless nature: a) an all-time low fertility rate (1.7 in Canada) in all western countries as well as Japan and declining rates elsewhere despite strong State intervention (Eastern Europe), and b) a convergence in crossectional and longitudinal measures of fertility, unprecedented in history (Romaniuc, 1984).

Demographers have identified changes to the overall structure of populations by examining variables like nuptiality, mortality and immigration. Since the two latter variables have shown very little relationship to the present fertility decline, nuptiality remains the focus of demographic analysis. Thus an amazing range of correlations [30] has been shown to exist between age at marriage, number of marriages and marriage duration on the one hand and aggregate measures of fertility on the other. With the massive volume of statistical detail, one may wonder whether or not the increased attraction of sophisticated statistical techniques is not one of the primary motives behind much of today's demographic research. Simultaneity of occurrence of variables does not mean that phenomena are significantly related. For example, postponed marriage cannot be said to reduce fertility unless it is used for contraceptive reasons, as it has been at times in history. But such is not the case today. Rather, what is striking in the present circumstances is the decline in marital fertility. [31] Conversely, it cannot be convincingly argued that, if people do not plan to have children anymore, marriage has diminished in importance.

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[30] One author ponders over the excessive use of correlations in these terms: "One wonders whether the exaggerated success of the correlation coefficient is not due to its power to hide the imprecision of concepts and to give the illusion of an important relationship between the variables studied, where in fact this relationship is very weak". Albert Jacquard, 1986, p. 93, our translation.

[31] This is not a new phenomenon either. In nineteenth century France, marriages were more numerous than in many Northern European countries whereas the birth rate was declining (Abbé C. Ract, 1901).

Demographers have been asking one question in western societies and its opposite in non-western societies. In the West, they wanted to know what makes people not have children, or have fewer children than they used to have. The assumption is that having children in more ancient times was a natural thing to do and it went unquestioned in a natural but irrational kind of way. Of course, this is not the case today because of the use of contraception. Consequently, demographers conclude that this attitude towards reducing fertility stems from greater individual choice. If this is true, why is it that the trend towards reducing one's number of children is increasingly homogeneous? In non-western countries with large populations, the question has been put as to why people had children and the answer (provided by the researchers themselves) has been threefold: nature, God and economics. As God could not be acted upon directly (although attempts have been made), nature and economics were the first targets in the control of population growth.

Nature could be interfered with, it was hoped, through the broad distribution of modern contraception. As this was known to be insufficient in an environment where a large number of offspring offered a decisive number of material advantages, it was decided that economic changes should be made through industrialization, urbanization or, more elusively, modernization. The assumption was that the ideology of family nucleation would automatically follow from such infrastructural changes. But this failed too. Where successes (in population control) have been recorded is also where God, or what Caldwell (1982) calls "the props" of religion, morals, laws, education, customs, etc. have been eroded by westernization or the importation of western values. Without such interference, there is increasing doubt that the props would have changed of themselves, in the direction of increased individualism. However much one may subscribe to the Spencerian evolutionary ideal of opposition between individuation and genesis, the emergence of conscious behaviour regarding fertility control remains insufficiently explained by any type of structural variables, be they economic, sociological, political and even biological.

This brief journey into western and non-western attitudes regarding fertility (thanks to Caldwell's insights) brings us to the fundamental question of the relative influence of preferences and constraints upon fertility decisions. The first and perhaps most obvious constraint upon the ability to procreate is, of course, physiological. However, the evidence gathered thus far does not point toward a large-scale diminution of our procreative capacity although there has been a marked increase in the size of

the 'clientele' referred to fertility clinics (B. Armitage, 1986). One document of the Quebec Ministry of Health notes that: "If natural sterility is not widespread, probably below 5%, the difficulty to procreate quickly (in less than a year) is more common and when doctors speak about infertility, they are referring to this difficulty". [32] It is now more common for couples to turn to the biological and medical sciences which promise the rewards of increasingly sophisticated reproductive technologies. And, it is not just medical science that has entered our bedrooms (which it did quite some time ago). Today, there is another intruder, the law. As Villedieu writes: "An unintended consequence of 'procreatics' is the entry of the lawyer in the bedroom. The doctor was there already. The priest may enter too via Ethics Committees." [33] According to this author, the infertile couple's desire to have a child by means of artificial procreation is becoming a fundamental right 'like the right of speech or to a fair trial." [34] And this new 'right' confronts the peoples of modern societies with a wide array of ethical dilemmas raised by birth technologies among which are included genetic manipulation and the commercialization of reproduction (the latter being already present).

There may now be a new tension between our natural selves and our social selves as women who decide to have a child later in life, at a time when their natural reproductive capacity has already begun to diminish, may find that they cannot or, if they can, it is only with great difficulty. There may be a price for postponement. Whether a woman postpones her career in favour of having children or postpones having children in favour of having a career, she runs the risk of not fulfilling all her needs. In the first case, the risk is socially imposed and in the second, it is imposed by nature. The dilemma is neither new nor unique to our society. Whereas in the West, the social valuation has tilted the precarious balance in favour of career, in other cultures it has been in favour of fertility. The argument that the latter is more constraining than the former hides a pernicious idea that western

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[32] From Villedieu (1987); all citations of Villedieu are this author's translation.

[33] From Villedieu, 1987. One such committee in France has recently proposed to stop all research on the subject. (G. Bonnot, 1986).

[34] Ibid.

cultures are rational and non-western cultures are not. We cannot but agree with Caldwell (1982) that both are rational but in relation to their own differing systems of social valuation. As he argues:

> ... there is not a whole range of economically rational levels of fertility in different societies, but instead two situations, the first where the economically rational response is an indefinitely large number of children and the second where it is to be childless ... maximum and minimum family sizes ... are determined by personal, social and physiological reasons, not economic ones." (p. 16)

Even so, economists argue that the contemporary small family represents a rational maximization of utility under income constraints and parents who, when asked about the value of having children, still mention social investment (Blake and del Pinal, 1981). This is despite the fact that children do not fulfill the function of social investment in western societies as has been aptly pointed out by Ariès (1980). Why this type of answer is still provided may reflect more a difficulty to articulate other types of answers because the desire to have or not to have children is embedded in deep-rooted psycho-cultural factors much harder to express and, indeed, to understand.

Instead, since increasingly 'rationalistic' questions will provoke increasingly 'rationalistic' answers, the most frequent explanations proferred to account for declining fertility refers to the financial costs of children. Has this secular concern with the economic costs of children taken the place of now vanished allegiances to religion, morals and customs that once favoured large families? We have to consider the possiblity that the so-called 'success' of modern economies has been made possible by the phenomenon of familial nucleation which dates back centuries (in Europe), in distinction from the more common suggestion that the present circumstances of individuation are the unintended consequence of the evolution of economic systems (see Caldwell, 1982, for insights on this question).

To some sociologists, who attempt to go beyond the narrowly deterministic economic models, the rise in individualism has been confused with increased societal freedom. Structural functionalism, in particular, has claimed that increased social differentiation and complexity provided the individual with a more heterogeous social environment wherefrom he could choose among a wider range of opportunities the lifestyle that suited him best. We question the idea that a diversified macro structure automatically implies greater individual choice. More fundamentally, we question whether or not the supposedly distinct opportunities represent a realm of genuine choices. Several authors, among which E. Fromm, have expressed the latter

idea in more convincing terms when discussing freedom and consumption and the role a distorted productivity plays in perpetuating a false competition between brands of the same product. If our needs are thus manipulated, what shall we say of our aspirations? Where does a freedom that is not shared with others actually lie? The concept of choice and the factors influencing it would have to be carefully thought through before one attempts to understand the nature of the decisions individuals make. There is, in our opinion, some reason to ponder on the observation E. Zola (cf. Baguley, 1973) made, in the nineteenth century, of a paradoxical growth in individualism coupled with a decline in individuality.

In 1890, A. Dumont succintly outlined the contours of a research agenda into the factors that account for fertility decline when he wrote: "The real cause of the weakening of our birth rate lies in the will to have few or no children, and this will is determined by a set of intellectual, moral and aesthetic dispositions that are particular to our nation." [35] Today, the pertinence of Dumont's questions is no longer particular to France at the turn of the century and we need, if we are to understand the convergence among the reproductive behaviours of the peoples of western nations, to examine the convergence of intellectual, moral and aesthetic dispositions of societies that do not reproduce themselves.

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[35] Our translation.

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